Current Status of U.S. Food Defense

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Overview

- Food Defense Concerns
- Food Safety vs. Food Defense
- Challenges Facing FDA
- Recent Events
  - Melamine
- Summary
Why Are We Concerned?

- Intelligence indicates terrorists have discussed components of the food sector
- Manuals for intentional contamination of food are widely available
- Food and Agriculture are critical assets and concern exists for exploitation of soft targets, such as the food supply
- Use of biological or chemical weapons against our food supply could cause mass casualties
- Even an ineffective attack could cause significant economic and psychological damage
Farm-to-Table Chain

- Attacks could be directed at crops, livestock, processing, distribution, storage, retail and transportation

- An act at any link could harm or kill significant numbers of people and have major economic implications
Intentional Adulteration

There have been examples of intentional adulteration of the food supply.

Review of these incidents provide insight into vulnerabilities in food security.
Intentional Incidents

1984
Oregon cult members added *Salmonella* bacteria to restaurant salad bars
  • Resulted in 751 illnesses, 45 hospitalizations

2003
Michigan supermarket employee intentionally contaminated 200 pounds of ground beef with a nicotine-based pesticide
  • 92 individuals reported becoming ill after consuming the ground beef
Food Defense Goals

- **Prevent** an attack if possible
- **Respond** rapidly and efficiently if needed
- **Recover** rapidly and restore consumer confidence in the food supply
Food Safety vs. Food Defense

Food Safety

- Unintentional
- Ongoing
- “Real” Threat
## Food Safety vs. Food Defense

<table>
<thead>
<tr>
<th>Food Safety</th>
<th>Food Defense</th>
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</thead>
<tbody>
<tr>
<td>• Unintentional</td>
<td>• Intentional</td>
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<tr>
<td>• Ongoing</td>
<td>• Sporadic</td>
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<tr>
<td>• “Real” Threat</td>
<td>• Plausible but unknown threat</td>
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# Food Safety vs. Food Defense

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# Food Safety vs. Food Defense

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</table>
| Microbiological | - Salmonella etc. | - Bacillus anthracis  
|           |              | - Botulinum toxin  
|           |              | - Others          |
| Chemical  | - Mercury etc. | - Ricin        
|           |              | - Cyanide        
|           |              | - Others          |
| Physical  | - Filth      | - Plant Security  
|           |              | - Personnel       
|           |              | - Information Security |
| Radiological | - “Natural” 
|           | - Reactors   | - Dirty Bomb       |
Food Safety vs. Food Defense

Common Themes

- Risk-based decision making
- Farm to table approach
- Domestic and imported products
Food Safety vs. Food Defense

Common Themes

- Similar approaches
- Common resources
  - Industry
  - Regulators
- Common tools
  - Methods
Detection at the local level
- Sick people
- Sick animals
- Detection of tampering

Focus for prevention is local
- Farm/processing facility/warehouse/retail

Same responders
Food Safety vs. Food Defense

*Important Differences*

- “Unnatural” contamination
- Familiar agents in unfamiliar places
- Need to think “outside the box”
- Role of law enforcement
Areas of Focus

- Vulnerability and Threat Assessments
- Industry Guidance and Preventive Measures
- Imports – Strategic Approach
- Research
- Emergency Preparedness and Response
- Bioterrorism Act Regulations
FDA faces increasing challenges and risks to the nation’s food system

- Increased globalization
- Changes in consumer expectations
- Changes in farming, manufacturing and processing
- Outdated infrastructure
- Terrorism
- Challenges in tracking food rapidly through wide distribution (e.g., melamine in pet food)
Rising Food Imports

- **16.3 MILLION IMPORT LINES**
- **9.1 MILLION FOOD LINES**
- **1,043 FTES**

**Estimated**

**Fiscal Year**

- 1997
- 2000
- 2003
- 2006
- 2007

- FTEs (includes all import areas)
- IMPORT LINES (000)
- FOOD LINES (000)
Types of Imported Goods

- Devices and Rad Health: 28%
- Animal Drugs and Feed: 2%
- Human Drugs: 2%
- Cosmetics: 9%
- Biologics: <1%
- FOODS: 59%
Melamine in Pet Food
2007
The Start

- Sick pets
  - Company testing
  - Consumer complaints
- Calls to FDA
- Only change to formulation was the source of wheat gluten
Sequence of Events

China Supplier

U.S. Importer

Pet Food Manufacturers

Pet Food
Sequence of Events

- 2 China Suppliers
  - 3 Feed Ingredient Manufacturers
    - 14 Pet Food Manufacturers
      - Pet Food

- 5 U.S. Importers
  - Scraps
Sequence of Events

- 2 China Suppliers
- 5 U.S. Importers
- 3 Feed Ingredient Manufacturers
- 14 Pet Food Manufacturers
- Feed Mill
- Poultry Farms
- Hog Farms
- 5 Rendering Plants
- Pet Food

Flow: 2 China Suppliers → 5 U.S. Importers → 3 Feed Ingredient Manufacturers → 14 Pet Food Manufacturers → Feed Mill → Poultry Farms → Hog Farms → 5 Rendering Plants
Recent Lessons

- Importance of communication
  - States, industry, Federal partners and the public
- Have a response plan
  - But have the capacity to change direction when needed
- Ability to move personnel and resources
- Prevention rather than reaction
Food Safety and Food Defense Integration

Food Safety

Food Defense

Food Protection

- Awareness
- Risk-based decision making
- Mitigation strategies
- Communication
- Scientific infrastructure
- IT infrastructure
Food Protection Goals

- **Prevent** an outbreak/attack
  - Awareness
  - Preparedness
  - Capacity Building

- **Intervention** through targeted inspection and sampling

- **Respond** rapidly and efficiently
The Future

Reactive

Proactive
Summary

- The U.S food supply is one of the safest in the world
- Overall foodborne illness and outbreaks rates unchanged
- Recent spate of outbreaks have caused loss of consumer confidence in food safety
- Changes in recent years have resulted in a need to refocus food protection strategy
- Greater emphasis on prevention
QUESTIONS ?